REMARKS

Reconsideration of this application as amended is requested. By this amendment Applicants have amended the specification to correct various obvious typographical and grammatical errors; and have replaced claims 1-17 with new claims 18-30. Claims 18-30 are now in the case.

Applicants' claimed invention is a gate comparator to enable high-speed search for an anomaly or violation in a long record length data acquisition of a test and measurement instrument, such as a digital oscilloscope. A plurality of gates may be defined, such as four in the given example, for any real acquired data, math-simulated data or reference data. The data may represent digitized signal waveforms. All gates are of the same width but otherwise separately controllable as to position of each gate and the source of data to be gated. The gated regions of the data are copied into respective reference (REF) memories. A user definable mathematical comparison expression is specified which defines what is an anomaly or violation. The gates automatically incrementally scan through the data from the source to which they are attached and maintain a constant relative positional offset. A comparison is done according to the mathematical comparison expression on a point-by-point basis between the gated data from the respective reference memories for each position of the gates, and any anomaly or violation is marked, either for later review or by pausing the scanning for instant review.

The Examiner objected to the drawing Figs. 3, 4A and 4B, indicating that the horizontal and vertical lines should be labeled and a title should be given to each drawing. Applicants submit that this is not necessary as the axes depend upon what type of test and measurement incorporates the gated comparator according to the present invention. All that is required is that the data is displayed in an X-Y coordinate system, as already indicated by these Figs. For a digital oscilloscope the axes would be amplitude and time, while for a digital spectrum analyzer the axes would be amplitude and frequency and for a telecommunications analyzer the axes may be I and Q components. One of ordinary skill in the art would be able to understand from the drawing Figs. what is indicated without the requirement of title or other labels.

The Examiner objected to claims 8 and 17 because of a minor informality. This objection is rendered moot by the cancellation of these claims.

The Examiner rejected claims 1, 2, 6, 8-11, 15 and 17 under 35 U.S.C. 102(b) as being anticipated by Pieper et al; rejected claims 3, 4, 7, 12, 13 and 16 under 35 U.S.C. 103(a) as being unpatentable over Pieper et al in view of Owaki et al; and rejected claims 5 and 14 under 35 U.S.C. 103(a) as being unpatentable over Pieper et al in view of Cook et al. The Examiner's rejections are rendered moot by the cancellation of these claims.

Applicants are presenting new claims 18-30 for consideration by the Examiner. These claims more clearly state what Applicants consider to be the invention. Specifically since the invention is a gate comparator, these claims include defining the gates, entering a mathematical comparison expression to be applied to data stored in respective reference memories which represent portions of the long record length data acquisition, executing the expression to determine if there is a violation, and scanning the long record length data acquisition so that all of the long record length data acquisition is processed. The data may represent waveforms from one or more input channels, and one of the reference memories is used as a reference by the comparison expression. The source of the data for the gates may be real data acquired by the test and measurement instrument, math simulated data or otherwise stored reference data. The violations may be indicated by marking the long record length data acquisition so an operator can subsequently return and zoom on those portions of the data, or by pausing the automatic scanning when a violation is determined and displaying the corresponding data from the respective reference memories.

In contradistinction to Applicants' presently claimed invention Pieper et al disclose a graphical data base editor that converts stimulus/response signal data into a format acceptable by a tester device. The data is graphically displayed as a waveform and a vector sequence, and on-screen editing of one is reflected in the display of the other. Pieper et al do not disclose the steps of defining gates, entering a mathematical comparison expression for comparing contents of reference memories in which portions of the record encompassed by the respective gates are stored, executing the expression to determine if a violation exists, and

repeating the storing and executing steps as the data record is scanned by incrementing the positions of the gates.

Likewise Owaki et al disclose a security checking function to authenticate a program to be executed. Although display data are compared with comparison reference data, there is no definition of gates, entering of a mathematical comparison expression or scanning as recited by Applicants.

Finally Cook et al disclose a time-base generator having alternative gated and ungated input circuits. However these are physical electrical gates and not gates comparable to data windows over a long record length data acquisition as recited by Applicants.

In view of the foregoing amendment and remarks, claims 18-30 are deemed to be allowable, and such action and the issuance of this case are requested.

Respectfully submitted,

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